FIGURE 1

```
              10          20          30          40          50
         1234567890  1234567890  1234567890  1234567890  1234567890
         TGGCCACTCC  CTCTCTGCGC  GCTCGCTCGC  TCACTGAGGC  CGGGCGACCA    50

         AAGGTCGCCC  GACGCCCGGG  CTTTGCCCGG  GCGGCCTCAG  TGAGCGAGCG   100

         AGCGCGCAGA  GAGGGAGTGG  CCAACTCCAT  CACTAGGGGT  TCCTCAGATC   150

         TCTTTCTAAG  TAAACAGTAC  ATGAACCTTT  ACCCCGTTGC  TCGGCAACGG   200

         CCTGGTCTGT  GCCAAGTGTT  TGCTGACGCA  ACCCCCACTG  GCTGGGGCTT   250

         GGCCATAGGC  CATCAGCGCA  TGCGGATCTC  AGTGTGGTTT  TGCAAGAGGA   300

         AGCAAAAAGC  CTCTCCACCC  AGGCCTGGAA  TGTTTCCACC  CAATGTCGAG   350

         CAGTGTGGTT  TTGCAAGAGG  AAGCAAAAAG  CCTCTCCACC  CAGGCCTGGA   400

         CTCGAGAGCT  TCGACCACCA  TGCAAATAGA  GCTCTCCACC  TGCTTCTTTC   450
                              M  etGlnIleGl  uLeuSerThr  CysPhePheL
         TGTGCCTTTT  GCGATTCTGC  TTTAGTGCCA  CCAGAAGATA  CTACCTGGGT   500
         euCysLeuLe  uArgPheCys  PheSerAlaT  hrArgArgTy  rTyrLeuGly
         GCAGTGGAAC  TGTCATGGGA  CTATATGCAA  AGTGATCTCG  GTGAGCTGCC   550
         AlaValGluL  euSerTrpAs  pTyrMetGln  SerAspLeuG  lyGluLeuPr
         TGTGGACGCA  AGATTCCTC   CTAGAGTGCC  AAAATCTTTT  CCATTCAACA   600
         oValAspAla  ArgPheProP  roArgValPr  oLysSerPhe  ProPheAsnT
         CCTCAGTCGT  GTACAAAAAG  ACTCTGTTTG  TAGAATTCAC  GGTTCACCTT   650
         hrSerValVa  lTyrLysLys  ThrLeuPheV  alGluPheTh  rValHisLeu
         TTCAACATCG  CTAAGCCAAG  GCCACCCTGG  ATGGGTCTGC  TAGGTCCTAC   700
         PheAsnIleA  laLysProAr  gProProTrp  MetGlyLeuL  euGlyProTh
         CATCCAGGCT  GAGGTTTATG  ATACAGTGGT  CATTACACTT  AAGAACATGG   750
         rIleGlnAla  GluValTyrA  spThrValVa  lIleThrLeu  LysAsnMetA
         CTTCCCATCC  TGTCAGTCTT  CATGCTGTTG  GTGTATCCTA  CTGGAAAGCT   800
         laSerHisPr  oValSerLeu  HisAlaValG  lyValSerTy  rTrpLysAla
         TCTGAGGGAG  CTGAATATGA  TGATCAGACC  AGTCAAAGGG  AGAAAGAAGA   850
         SerGluGlyA  laGluTyrAs  pAspGlnThr  SerGlnArgG  luLysGluAs
         TGATAAAGTC  TTCCCTGGTG  GAAGCCATAC  ATATGTCTGG  CAGGTCCTGA   900
         pAspLysVal  PheProGlyG  lySerHisTh  rTyrValTrp  GlnValLeuL
         AAGAGAATGG  TCCAATGGCC  TCTGACCCAC  TGTGCCTTAC  CTACTCATAT   950
         ysGluAsnGl  yProMetAla  SerAspProL  euCysLeuTh  rTyrSerTyr
```

FIGURE 1 (cont.)

```
          10         20         30         40         50
      1234567890 1234567890 1234567890 1234567890 1234567890

      CTTTCTCATG TGGACCTGGT AAAAGACTTG AATTCAGGCC TCATTGGAGC   1000
      LeuSerHisV alAspLeuVa lLysAspLeu AsnSerGlyL euIleGlyAl

      CCTACTAGTA TGTAGAGAAG GGAGTCTGGC CAAGGAAAAG ACACAGACCT   1050
      aLeuLeuVal CysArgGluG lySerLeuAl aLysGluLys ThrGlnThrL

      TGCACAAATT TATACTACTT TTTGCTGTAT TTGATGAAGG GAAAAGTTGG   1100
      euHisLysPh eIleLeuLeu PheAlaValP heAspGluGl yLysSerTrp

      CACTCAGAAA CAAAGAACTC CTTGATGCAG GATAGGGATG CTGCATCTGC   1150
      HisSerGluT hrLysAsnSe rLeuMetGln AspArgAspA laAlaSerAl

      TCGGGCCTGG CCTAAAATGC ACACAGTCAA TGGTTATGTA AACAGGTCTC   1200
      aArgAlaTrp ProLysMetH isThrValAs nGlyTyrVal AsnArgSerL

      TGCCAGGTCT GATTGGATGC CACAGGAAAT CAGTCTATTG GCATGTGATT   1250
      euProGlyLe uIleGlyCys HisArgLysS erValTyrTr pHisValIle

      GGAATGGGCA CCACTCCTGA AGTGCACTCA ATATTCCTCG AAGGTCACAC   1300
      GlyMetGlyT hrThrProGl uValHisSer IlePheLeuG luGlyHisTh

      ATTTCTTGTG AGGAACCATC GCCAGGCGTC CTTGGAAATC TCGCCAATAA   1350
      rPheLeuVal ArgAsnHisA rgGlnAlaSe rLeuGluIle SerProIleT

      CTTTCCTTAC TGCTCAAACA CTCTTGATGG ACCTTGGACA GTTTCTACTG   1400
      hrPheLeuTh rAlaGlnThr LeuLeuMetA spLeuGlyGl nPheLeuLeu

      TTTTGTCATA TCTCTTCCCA CCAACATGAT GGCATGGAAG CTTATGTCAA   1450
      PheCysHisI leSerSerHi sGlnHisAsp GlyMetGluA laTyrValLy

      AGTAGACAGC TGTCCAGAGG AACCCCAACT ACGAATGAAA AATAATGAAG   1500
      sValAspSer CysProGluG luProGlnLe uArgMetLys AsnAsnGluG

      AAGCGGAAGA CTATGATGAT GATCTTACTG ATTCTGAAAT GGATGTGGTC   1550
      luAlaGluAs pTyrAspAsp AspLeuThrA spSerGluMe tAspValVal

      AGGTTTGATG ATGACAACTC TCCTTCCTTT ATCCAAATTC GCTCAGTTGC   1600
      ArgPheAspA spAspAsnSe rProSerPhe IleGlnIleA rgSerValAl

      CAAGAAGCAT CCTAAAACTT GGGTACATTA CATTGCTGCT GAAGAGGAGG   1650
      aLysLysHis ProLysThrT rpValHisTy rIleAlaAla GluGluGluA

      ACTGGGACTA TGCTCCCTTA GTCCTCGCCC CCGATGACAG AAGTTATAAA   1700
      spTrpAspTy rAlaProLeu ValLeuAlaP roAspAspAr gSerTyrLys

      AGTCAATATT TGAACAATGG CCCTCAGCGG ATTGGTAGGA AGTACAAAAA   1750
      SerGlnTyrL euAsnAsnGl yProGlnArg IleGlyArgL ysTyrLysLy

      AGTCCGATTT ATGGCATACA CAGATGAAAC CTTTAAGACT CGTGAAGCTA   1800
      sValArgPhe MetAlaTyrT hrAspGluTh rPheLysThr ArgGluAlaI

      TTCAGCATGA ATCAGGAATC TTGGGACCTT TACTTTATGG GGAAGTTGGA   1850
      leGlnHisGl uSerGlyIle LeuGlyProL euLeuTyrGl yGluValGly

      GACACACTGT TGATTATATT TAAGAATCAA GCAAGCAGAC CATATAACAT   1900
      AspThrLeuL euIleIlePh eLysAsnGln AlaSerArgP roTyrAsnIl
```

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FIGURE 1 (cont.)

```
                10          20          30          40          50
           1234567890  1234567890  1234567890  1234567890  1234567890
          CTACCCTCAC  GGAATCACTG  ATGTCCGTCC  TTTGTATTCA  AGGAGATTAC  1950
          eTyrProHis  GlyIleThrA  spValArgPr  oLeuTyrSer  ArgArgLeuP
          CAAAAGGTGT  AAAACATTTG  AAGGATTTTC  CAATTCTGCC  AGGAGAAATA  2000
          roLysGlyVa  lLysHisLeu  LysAspPheP  roIleLeuPr  oGlyGluIle
          TTCAAATATA  AATGGACAGT  GACTGTAGAA  GATGGGCCAA  CTAAATCAGA  2050
          PheLysTyrL  ysTrpThrVa  lThrValGlu  AspGlyProT  hrLysSerAs
          TCCTCGGTGC  CTGACCCGCT  ATTACTCTAG  TTTCGTTAAT  ATGGAGAGAG  2100
          pProArgCys  LeuThrArgT  yrTyrSerSe  rPheValAsn  MetGluArgA
          ATCTAGCTTC  AGGACTCATT  GGCCCTCTCC  TCATCTGCTA  CAAAGAATCT  2150
          spLeuAlaSe  rGlyLeuIle  GlyProLeuL  euIleCysTy  rLysGluSer
          GTAGATCAAA  GAGGAAACCA  GATAATGTCA  GACAAGAGGA  ATGTCATCCT  2200
          ValAspGlnA  rgGlyAsnGl  nIleMetSer  AspLysArgA  snValIleLe
          GTTTCTGTA   TTTGATGAGA  ACCGAAGCTG  GTACCTCACA  GAGAATATAC  2250
          uPheSerVal  PheAspGluA  snArgSerTr  pTyrLeuThr  GluAsnIleG
          AACGCTTTCT  CCCCAATCCA  GCTGGAGTGC  AGCTTGAGGA  TCCAGAGTTC  2300
          lnArgPheLe  uProAsnPro  AlaGlyValG  lnLeuGluAs  pProGluPhe
          CAAGCCTCCA  ACATCATGCA  CAGCATCAAT  GGCTATGTTT  TTGATAGTTT  2350
          GlnAlaSerA  snIleMetHi  sSerIleAsn  GlyTyrValP  heAspSerLe
          GCAGTTGTCA  GTTTGTTTGC  ATGAGGTGGC  ATACTGGTAC  ATTCTAAGCA  2400
          uGlnLeuSer  ValCysLeuH  isGluValAl  aTyrTrpTyr  IleLeuSerI
          TTGGAGCACA  GACTGACTTC  CTTTCTGTCT  TCTTCTCTGG  ATATACCTTC  2450
          leGlyAlaGl  nThrAspPhe  LeuSerValP  hePheSerGl  yTyrThrPhe
          AAACACAAAA  TGGTCTATGA  AGACACACTC  ACCCTATTCC  CATTCTCAGG  2500
          LysHisLysM  etValTyrGl  uAspThrLeu  ThrLeuPheP  roPheSerGl
          AGAAACTGTC  TTCATGTCGA  TGGAAAACCC  AGGTCTATGG  ATTCTGGGGT  2550
          yGluThrVal  PheMetSerM  etGluAsnPr  oGlyLeuTrp  IleLeuGlyC
          GCCACAACTC  AGACTTTCGG  AACAGAGGCA  TGACCGCCTT  ACTGAAGGTT  2600
          ysHisAsnSe  rAspPheArg  AsnArgGlyM  etThrAlaLe  uLeuLysVal
          TCTAGTTGTG  ACAAGAACAC  TGGTGATTAT  TACGAGGACA  GTTATGAAGA  2650
          SerSerCysA  spLysAsnTh  rGlyAspTyr  TyrGluAspS  erTyrGluAs
          TATTTCAGCA  TACTTGCTGA  GTAAAAACAA  TGCCATTGAA  CCAAGAAGCT  2700
          pIleSerAla  TyrLeuLeuS  erLysAsnAs  nAlaIleGlu  ProArgSerP
          TCTCCCAGAA  TTCAAGACAC  CCTAGCACTA  GGCAAAAGCA  ATTTAATGCC  2750
          heSerGlnAs  nSerArgHis  ProSerThrA  rgGlnLysGl  nPheAsnAla
          ACCCCACCAG  TCTTGAAACG  CCATCAACGG  GAAATAACTC  GTACTACTCT  2800
          ThrProProV  alLeuLysAr  gHisGlnArg  GluIleThrA  rgThrThrLe
          TCAGTCAGAT  CAAGAGGAAA  TTGACTATGA  TGATACCATA  TCAGTTGAAA  2850
          uGlnSerAsp  GlnGluGluI  leAspTyrAs  pAspThrIle  SerValGluM
```

FIGURE 1 (cont.)

```
              10         20         30         40         50
        1234567890 1234567890 1234567890 1234567890 1234567890
        TGAAGAAGGA AGATTTGAC ATTTATGATG AGGATGAAAA TCAGAGCCCC
        etLysLysGl uAspPheAsp IleTyrAspG luAspGluAs nGlnSerPro      2900
        CGCAGCTTTC AAAAGAAAC ACGACACTAT TTTATTGCTG CAGTGGAGAG
        ArgSerPheG lnLysLysTh rArgHisTyr PheIleAlaA laValGluAr      2950
        GCTCTGGGAT TATGGGATGA GTAGCTCCCC ACATGTTCTA AGAAACAGGG
        gLeuTrpAsp TyrGlyMetS erSerSerPr oHisValLeu ArgAsnArgA      3000
        CTCAGAGTGG CAGTGTCCCT CAGTTCAAGA AAGTTGTTTT CCAGGAATTT
        laGlnSerGl ySerValPro GlnPheLysL ysValValPh eGlnGluPhe      3050
        ACTGATGGCT CCTTTACTCA GCCCTTATAC CGTGGAGAAC TAAATGAACA
        ThrAspGlyS erPheThrGl nProLeuTyr ArgGlyGluL euAsnGluHi      3100
        TTTGGGACTC CTGGGGCCAT ATATAAGAGC AGAAGTTGAA GATAATATCA
        sLeuGlyLeu LeuGlyProT yrIleArgAl aGluValGlu AspAsnIleM      3150
        TGGTAACTTT CAGAAATCAG GCCTCTCGTC CCTATTCCTT CTATTCTAGC
        etValThrPh eArgAsnGln AlaSerArgP roTyrSerPh eTyrSerSer      3200
        CTTATTTCTT ATGAGGAAGA TCAGAGGCAA GGAGCAGAAC CTAGAAAAAA
        LeuIleSerT yrGluGluAs pGlnArgGln GlyAlaGluP roArgLysAs      3250
        CTTTGTCAAG CCTAATGAAA CCAAAACTTA CTTTTGGAAA GTGCAACATC
        nPheValLys ProAsnGluT hrLysThrTy rPheTrpLys ValGlnHisH      3300
        ATATGGCACC CACTAAAGAT GAGTTTGACT GCAAAGCCTG GGCTTATTTC
        isMetAlaPr oThrLysAsp GluPheAspC ysLysAlaTr pAlaTyrPhe      3350
        TCTGATGTTG ACCTGGAAAA AGATGTGCAC TCAGGCCTGA TTGGACCCCT
        SerAspValA spLeuGluLy sAspValHis SerGlyLeuI leGlyProLe      3400
        TCTGGTCTGC CACACTAACA CACTGAACCC TGCTCATGGG AGACAAGTGA
        uLeuValCys HisThrAsnT hrLeuAsnPr oAlaHisGly ArgGlnValT      3450
        CAGTACAGGA ATTTGCTCTG TTTTTCACCA TCTTTGATGA GACCAAAAGC
        hrValGlnGl uPheAlaLeu PhePheThrI lePheAspGl uThrLysSer      3500
        TGGTACTTCA CTGAAAATAT GGAAAGAAAC TGCAGGGCTC CCTGCAATAT
        TrpTyrPheT hrGluAsnMe tGluArgAsn CysArgAlaP roCysAsnIl      3550
        CCAGATGGAA GATCCCACTT TTAAAGAGAA TTATCGCTTC CATGCAATCA
        eGlnMetGlu AspProThrP heLysGluAs nTyrArgPhe HisAlaIleA      3600
        ATGGCTACAT AATGGATACA CTACCTGGCT TAGTAATGGC TCAGGATCAA
        snGlyTyrIl eMetAspThr LeuProGlyL euValMetAl aGlnAspGln      36͟
        AGGATTCGAT GGTATCTGCT CAGCATGGGC AGCAATGAAA ACATCC͟
        ArgIleArgT rpTyrLeuLe uSerMetGly SerAsnGluA snI͟
        TATTCATTTC AGTGGACATG TGTTCACTGT ACGAAAAAA͟         3800
        rIleHisPhe SerGlyHisV alPheThrVa lArgLy͟
        AAATGGCACT GTACAATCTC TATCCAGGTG TTT͟
        ysMetAlaLe uTyrAsnLeu TyrProGlyV a͟
```

```
          10         20         30         40         50
     1234567890 1234567890 1234567890 1234567890 1234567890
     TTACCATCCA AAGCTGGAAT TTGGCGGGTG GAATGCCTTA TTGGCGAGCA     3850
     LeuProSerL ysAlaGlyIl eTrpArgVal GluCysLeuI leGlyGluHi
     TCTACATGCT GGGATGAGCA CACTTTTTCT GGTGTACAGC AATAAGTGTC     3900
     sLeuHisAla GlyMetSerT hrLeuPheLe uValTyrSer AsnLysCysG
     AGACTCCCCT GGGAATGGCT TCTGGACACA TTAGAGATTT TCAGATTACA     3950
     lnThrProLe uGlyMetAla SerGlyHisI leArgAspPh eGlnIleThr
     GCTTCAGGAC AATATGGACA GTGGGCCCCA AAGCTGGCCA GACTTCATTA     4000
     AlaSerGlyG lnTyrGlyGl nTrpAlaPro LysLeuAlaA rgLeuHisTy
     TTCCGGATCA ATCAATGCCT GGAGCACCAA GGAGCCCTTT TCTTGGATCA     4050
     rSerGlySer IleAsnAlaT rpSerThrLy sGluProPhe SerTrpIleL
     AGGTGGATCT GTTGGCACCA ATGATTATTC ACGGCATCAA GACCCAGGGT     4100
     ysValAspLe uLeuAlaPro MetIleIleH isGlyIleLy sThrGlnGly
     GCCCGTCAGA AGTTCTCCAG CCTCTACATC TCTCAGTTTA TCATCATGTA     4150
     AlaArgGlnL ysPheSerSe rLeuTyrIle SerGlnPheI leIleMetTy
     TAGTCTTGAT GGGAAGAAGT GGCAGACTTA TCGAGGAAAT TCCACTGGAA     4200
     rSerLeuAsp GlyLysLysT rpGlnThrTy rArgGlyAsn SerThrGlyT
     CCTTAATGGT CTTCTTTGGC AATGTGGATT CATCTGGGAT AAAACACAAT     4250
     hrLeuMetVa lPhePheGly AsnValAspS erSerGlyIl eLysHisAsn
     ATTTTTAACC CTCCAATTAT TGCTCGATAC ATCCGTTTGC ACCCAACTCA     4300
     IlePheAsnP roProIleIl eAlaArgTyr IleArgLeuH isProThrHi
     TTATAGCATT CGCAGCACTC TTCGCATGGA GTTGATGGGC TGTGATTTAA     4350
     sTyrSerIle ArgSerThrL euArgMetGl uLeuMetGly CysAspLeuA
     ATAGTTGCAG CATGCCATTG GGAATGGAGA GTAAAGCAAT ATCAGATGCA     4400
     snSerCysSe rMetProLeu GlyMetGluS erLysAlaIl eSerAspAla
     CAGATTACTG CTTCATCCTA CTTTACCAAT ATGTTTGCCA CCTGGTCTCC     4450
     GlnIleThrA laSerSerTy rPheThrAsn MetPheAlaT hrTrpSerPr
     TTCAAAAGCT CGACTTCACC TCCAAGGGAG GAGTAATGCC TGGAGACCTC     4500
     oSerLysAla ArgLeuHisL euGlnGlyAr gSerAsnAla TrpArgProG
     AGGTGAATAA TCCAAAAGAG TGGCTGCAAG TGGACTTCCA GAAGACAATG     4550
     lnValAsnAs nProLysGlu TrpLeuGlnV alAspPheGl nLysThrMet
     AAAGTCACAG GAGTAACTAC TCAGGGAGTA AAATCTCTGC TTACCAGCAT     4600
     LysValThrG lyValThrTh rGlnGlyVal LysSerLeuL euThrSerMe
     GTATGTGAAG GAGTTCCTCA TCTCCAGCAG TCAAGATGGC CATCAGTGGA     4650
     tTyrValLys GluPheLeuI leSerSerSe rGlnAspGly HisGlnTrpT
     CTCTCTTTTT TCAGAATGGC AAAGTAAAGG TTTTTCAGGG AAATCAAGAC     4700
     hrLeuPhePh eGlnAsnGly LysValLysV alPheGlnGl yAsnGlnAsp
     TCCTTCACAC CTGTGGTGAA CTCTCTAGAC CCACCGTTAC TGACTCGCTA     4750
     SerPheThrP roValValAs nSerLeuAsp ProProLeuL euThrArgTy
```

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FIGURE 1 (cont.)

```
                10         20         30         40         50
        1234567890 1234567890 1234567890 1234567890 1234567890
        CCTTCGAATT CACCCCCAGA GTTGGGTGCA CCAGATTGCC CTGAGGATGG     4800
        rLeuArgIle HisProGlnS erTrpValHi sGlnIleAla LeuArgMetG
        AGGTTCTGGG CTGCGAGGCA CAGGACCTCT ACTGACTCGA GCGAGTTCTT     4850
        luValLeuGl yCysGluAla GlnAspLeuT yr...
        CTGAGGGGAT CGGCAATAAA AAGACAGAAT AAAACGCACG GGTGTTGGGT     4900

        CGTTTGTTCG GATCCAGATC TAGGAACCCC TAGTGATGGA GTTGGCCACT     4950

        CCCTCTCTGC GCGCTCGCTC GCTCACTGAG GCCGCCCGGG CAAAGCCCGG     5000

        GCGTCGGGCG ACCTTTGGTC GCCCGGCCTC AGTGAGCGAG CGAGCGCGCA     5050

        GAGAGGGAGT GGCCAACCCC CCCCCCCCCC CCCCTGCAGC CCAGCTGCAT     5100

        TAATGAATCG GCCAACGCGC GGGGAGAGGC GGTTTGCGTA TTGGGCGCTC     5150

        TTCCGCTTCC TCGCTCACTG ACTCGCTGCG CTCGGTCGTT CGGCTGCGGC     5200

        GAGCGGTATC AGCTCACTCA AAGGCGGTAA TACGGTTATC CACAGAATCA     5250

        GGGGATAACG CAGGAAAGAA CATGTGAGCA AAAGGCCAGC AAAAGGCCAG     5300

        GAACCGTAAA AAGGCCGCGT TGCTGGCGTT TTTCCATAGG CTCCGCCCCC     5350

        CTGACGAGCA TCACAAAAAT CGACGCTCAA GTCAGAGGTG GCGAAACCCG     5400

        ACAGGACTAT AAAGATACCA GGCGTTTCCC CCTGGAAGCT CCCTCGTGCG     5450

        CTCTCCTGTT CCGACCCTGC CGCTTACCGG ATACCTGTCC GCCTTTCTCC     5500

        CTTCGGGAAG CGTGGCGCTT TCTCAATGCT CACGCTGTAG GTATCTCAGT     5550

        TCGGTGTAGG TCGTTCGCTC CAAGCTGGGC TGTGTGCACG AACCCCCCGT     5600

        TCAGCCCGAC CGCTGCGCCT TATCCGGTAA CTATCGTCTT GAGTCCAACC     5650

        CGGTAAGACA CGACTTATCG CCACTGGCAG CAGCCACTGG TAACAGGATT     5700
```

FIGURE 1 (cont.)

```
          10         20         30         40         50
      1234567890 1234567890 1234567890 1234567890 1234567890
      AGCAGAGCGA GGTATGTAGG CGGTGCTACA GAGTTCTTGA AGTGGTGGCC    5750

      TAACTACGGC TACACTAGAA GGACAGTATT TGGTATCTGC GCTCTGCTGA    5800

      AGCCAGTTAC CTTCGGAAAA AGAGTTGGTA GCTCTTGATC CGGCAAACAA    5850

      ACCACCGCTG GTAGCGGTGG TTTTTTTGTT TGCAAGCAGC AGATTACGCG    5900

      CAGAAAAAAA GGATCTCAAG AAGATCCTTT GATCTTTTCT ACGGGGTCTG    5950

      ACGCTCAGTG GAACGAAAAC TCACGTTAAG GGATTTTGGT CATGAGATTA    6000

      TCAAAAAGGA TCTTCACCTA GATCCTTTTA AATTAAAAAT GAAGTTTTAA    6050

      ATCAATCTAA AGTATATATG AGTAAACTTG GTCTGACAGT TACCAATGCT    6100
                                                   ylGelIreS
      TAATCAGTGA GGCACCTATC TCAGCGATCT GTCTATTTCG TTCATCCATA    6150
      ueL...siHo rPlaV...gr AueLreSgrA psAelIulGn sAteMprTue
      GTTGCCTGAC TCCCCGTCGT GTAGATAACT ACGATACGGG AGGGCTTACC    6200
      LnlGgrAlaV ylGgrAgrAr hTreSueL.. .reSlaVorP orPreSlaVt
      ATCTGGCCCC AGTGCTGCAA TGATACCGCG AGACCCACGC TCACCGGCTC    6250
      eMnlGylGpr TsiHnlGueL reSlaValAu eLylGlaVre SlaVorPulG
      CAGATTTATC AGCAATAAAC CAGCCAGCCG GAAGGGCCGA GCGCAGAAGT    6300
      ueLnsAelIu eLueLueLyl GalAueLgrA ehPorPgrAa lAsyCehPsi
      GGTCCTGCAA CTTTATCCGC CTCCATCCAG TCTATTAATT GTTGCCGGGA    6350
      HpsAnlGueL syLelIgrAg rAprTylGrh T......nsA nsAylGorPu
      AGCTAGAGTA AGTAGTTCGC CAGTTAATAG TTTGCGCAAC GTTGTTGCCA    6400
      eL...ueLue LryTnsAalA ueL...ryTn sAalAsyCgr AnlGnlGprT
      TTGCTACAGG CATCGTGGTG TCACGCTCGT CGTTTGGTAT GGCTTCATTC    6450
      nlG...ueLs yCgrAorPrh TlaVreSrhT rhTnlGryTo rPsyLteM..
      AGCTCCGGTT CCCAACGATC AAGGCGAGTT ACATGATCCC CCATGTTGTG    6500
      .reSgrAnsA ylGlaVelIu eLalAueL.. .teMelIylG prTrhTrhTs
      CAAAAAAGCG GTTAGCTCCT TCGGTCCTCC GATCGTTGTC AGAAGTAAGT    6550
      yCehPueLor P...reSgrA grApsAulGr eSgrAnlG.. .ehPryTrhT
      TGGCCGCAGT GTTATCACTC ATGGTTATGG CAGCACTGCA TAATTCTCTT    6600
      orPgrAueLr hTelIlaV.. .orP...orP ueLlaValAr yTnsAulG..
      ACTGTCATGC CATCCGTAAG ATGCTTTTCT GTGACTGGTG AGTACTCAAC    6650
      .nlG...alA teMgrAueLe lIreSsyLnl GreSnlGsiH rhTreSueLp
```
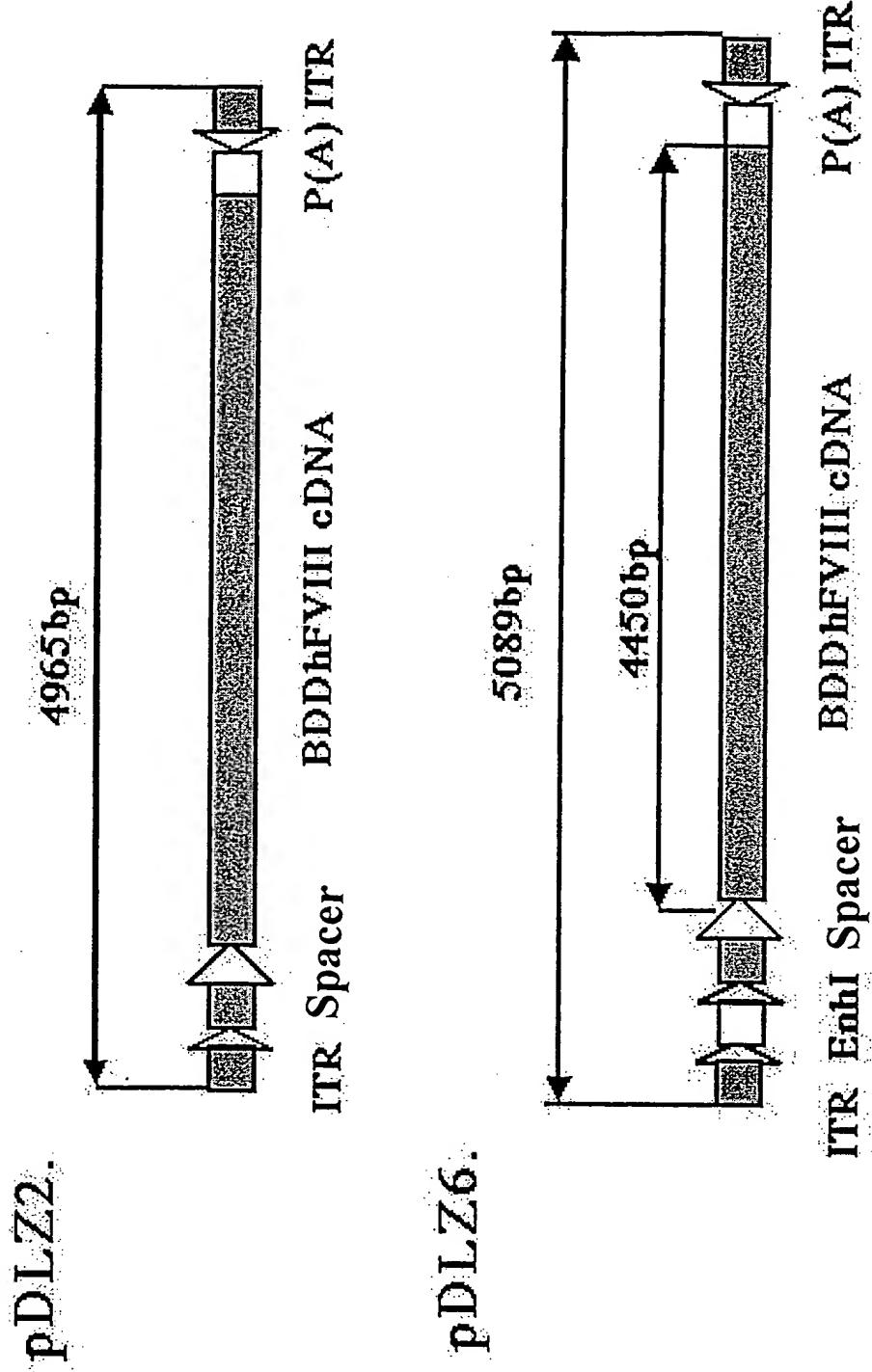
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FIGURE 1 (cont.)

```
          10         20         30         40         50
  1234567890 1234567890 1234567890 1234567890 1234567890
  CAAGTCATTC TGAGAATAGT GTATGCGGCG ACCGAGTTGC TCTTGCCCGG   6700
  rTrhTteMgr AueLelIrhT ryTalAalAl aVreSnsAre SsyLylGorP
  CGTCAATACG GGATAATACC GCGCCACATA GCAGAACTTT AAAAGTGCTC   6750
  rhTueLlaVo rPryTryTgr AalAlaVryT syCehPsyLu eLueLalA..
  ATCATTGGAA AACGTTCTTC GGGGCGAAAA CTCTCAAGGA TCTTACCGCT   6800
  ....nlGehP laVnsAsyLo rPalAehPla VgrAueLreS grAlaValAr
  GTTGAGATCC AGTTCGATGT AACCCACTCG TGCACCCAAC TGATCTTCAG   6850
  hTreSelIpr TnsAreSrhT laVprTulGs iHlaVprTre SelIsyLueL
  CATCTTTTAC TTTCACCAGC GTTTCTGGGT GAGCAAAAC AGGAAGGCAA    6900
  teMsyL...s yL...prTgr AsyLnlGrhT ueLueLehPu eLehPalAeh
  AATGCCGCAA AAAAGGGAAT AAGGGCGACA CGGAAATGTT GAATACTCAT   6950
  PsiHgrAueL ehPorPehPu eLorPreSla VreSelInsA ehPlaV...l
  ACTCTTCCTT TTTCAATATT ATTGAAGCAT TTATCAGGGT TATTGTCTCA   7000

  TGAGCGGATA CATATTTGAA TGTATTTAGA AAAATAAACA AATAGGGGTT   7050

  CCGCGCACAT TTCCCCGAAA AGTGCCACCT GACGTCTAAG AAACCATTAT   7100

  TATCATGACA TTAACCTATA AAAATAGGCG TATCACGAGG CCCTTTCGTC   7150

  TCGCGCGTTT CGGTGATGAC GGTGAAAACC TCTGACACAT GCAGCTCCCG   7200

  GAGACGGTCA CAGCTTGTCT GTAAGCGGAT GCCGGGAGCA GACAAGCCCG   7250

  TCAGGGCGCG TCAGCGGGTG TTGGCGGGTG TCGGGCTGG CTTAACTATG    7300

  CGGCATCAGA GCAGATTGTA CTGAGAGTGC ACCATATGCG GTGTGAAATA   7350

  CCGCACAGAT GCGTAAGGAG AAAATACCGC ATCAGGAAAT TGTAAACGTT   7400

  AATATTTTGT TAAAATTCGC GTTAAATTTT TGTTAAATCA GCTCATTTTT   7450

  TAACCAATAG GCCGAAATCG GCAAAATCCC TTATAAATCA AAAGAATAGA   7500

  CCGAGATAGG GTTGAGTGTT GTTCCAGTTT GGAACAAGAG TCCACTATTA   7550

  AAGAACGTGG ACTCCAACGT CAAAGGGCGA AAAACCGTCT ATCAGGGCGA   7600
```

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FIGURE 1 (cont.)

	10	20	30	40	50	
	1234567890	1234567890	1234567890	1234567890	1234567890	

TGGCCCACTA CGTGAACCAT CACCCTAATC AAGTTTTTTG GGGTCGAGGT   7650

GCCGTAAAGC ACTAAATCGG AACCCTAAAG GGAGCCCCCG ATTTAGAGCT   7700

TGACGGGGAA AGCCGGCGAA CGTGGCGAGA AAGGAAGGGA AGAAAGCGAA   7750

AGGAGCGGGC GCTAGGGCGC TGGCAAGTGT AGCGGTCACG CTGCGCGTAA   7800

CCACCACACC CGCCGCGCTT AATGCGCCGC TACAGGGCGC GTCGCGCCAT   7850

TCGCCATTCA GGCTACGCAA CTGTTGGGAA GGGCGATCGG TGCGGGCCTC   7900

TTCGCTATTA CGCCAGCTGG CTGCAGGGGG GGGGGGGGGG GGGT   7944

FIGURE 2

FIGURE 3

Control
Transduced cells
DLZ2   DLZ6
Uncoated virus

7.5 Kb (Dimer)
5.0 Kb (Monomer)
3.0 Kb (SS)

FIGURE 4-A

FIGURE 4-B

hFVIII (ng/ml)

Days Post-injection of AAV

GCGCTGCTC ACGTGCGCGG

FIGURE 5-A

5' primer

3' primer

FIGURE 5-B

Muscle
Spinal cord
Brain
Lungs
Heart
Lymph node
Intestine
Testis
Kidney
Spleen
Liver/LD
Liver/HD
0.001 copy/cell
0.02copies/cell
0.25copies/cell
1copy/cell
5 copies/cell

450 bp

GCTGCT GCTGCGGGG

FIGURE 5-C

5' primer

3' primer

FIGURE 5-D

Control
Muscle
Bone marrow
Lymph nodes
Testis
Intestine
Kidney
Spleen
No-RT Liver/HD
Liver/HD
Liver/HD

— 534 bp
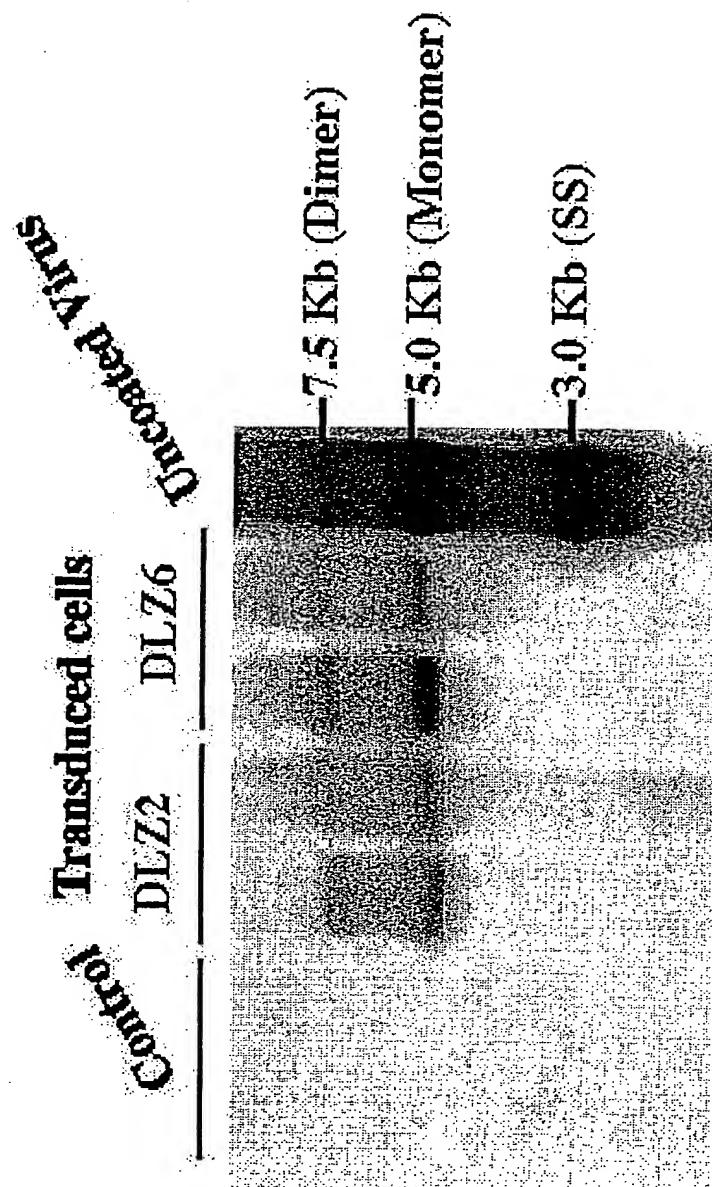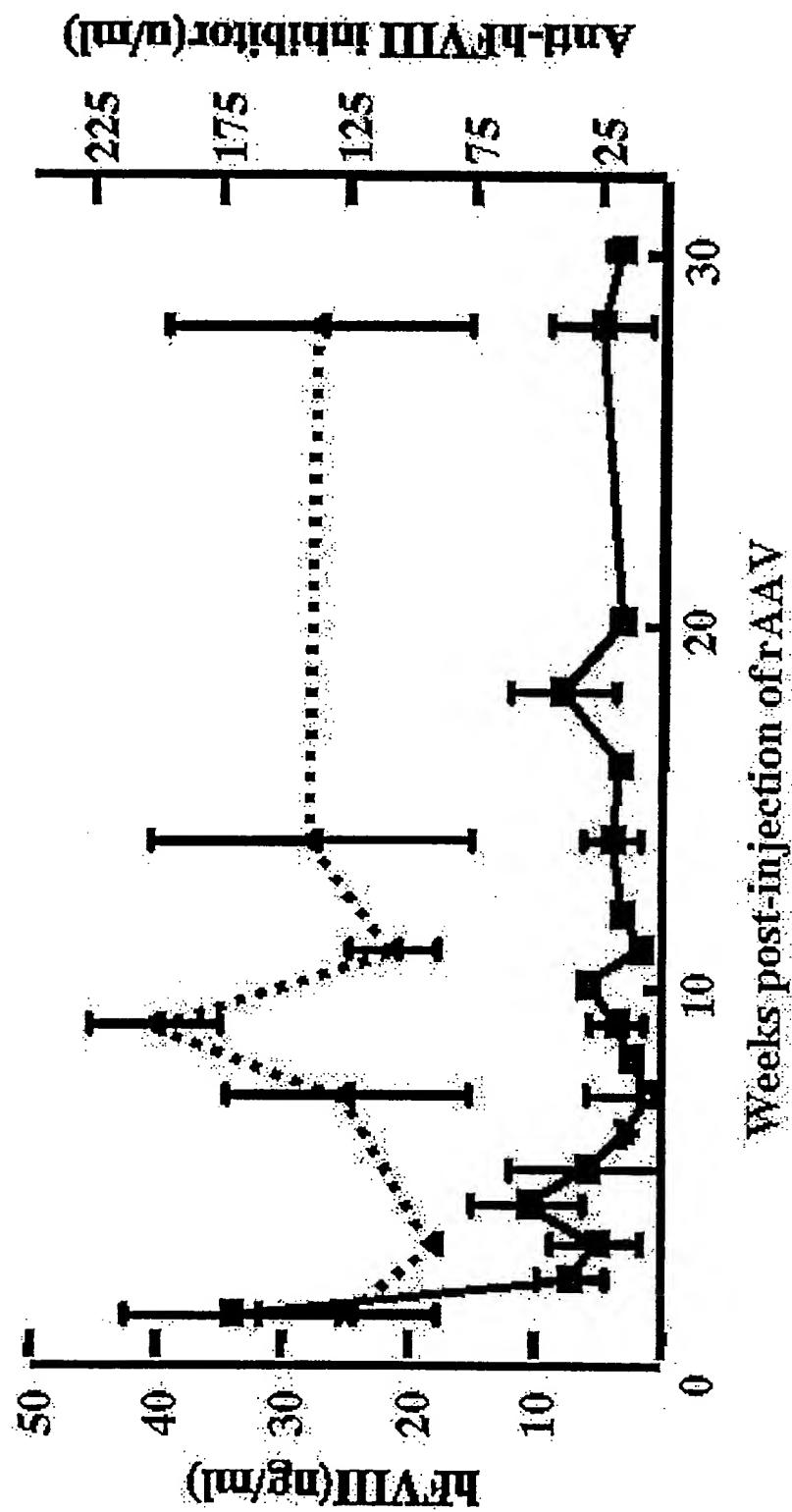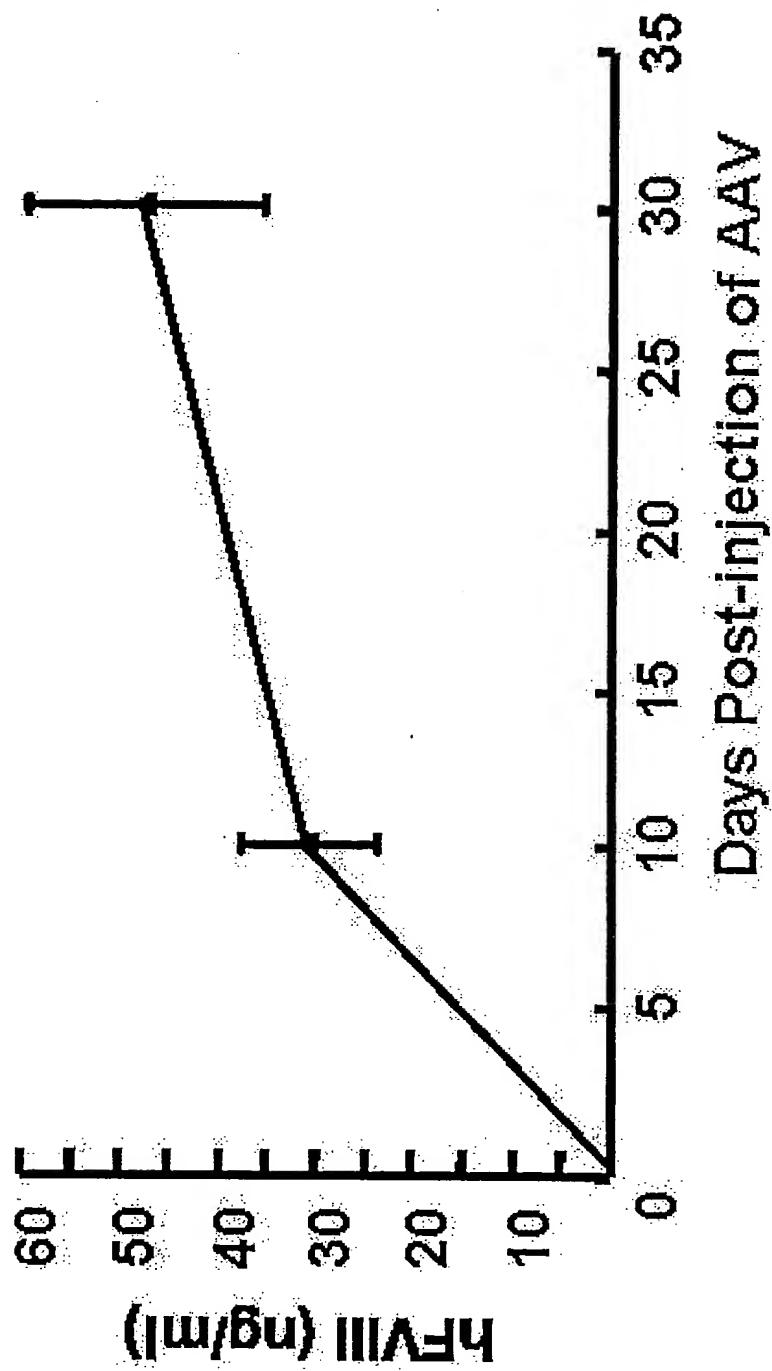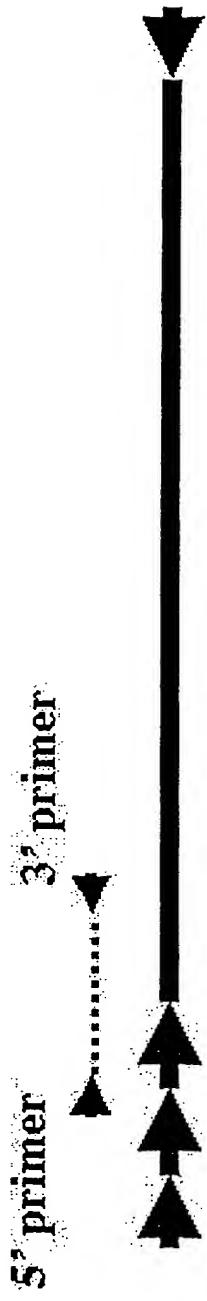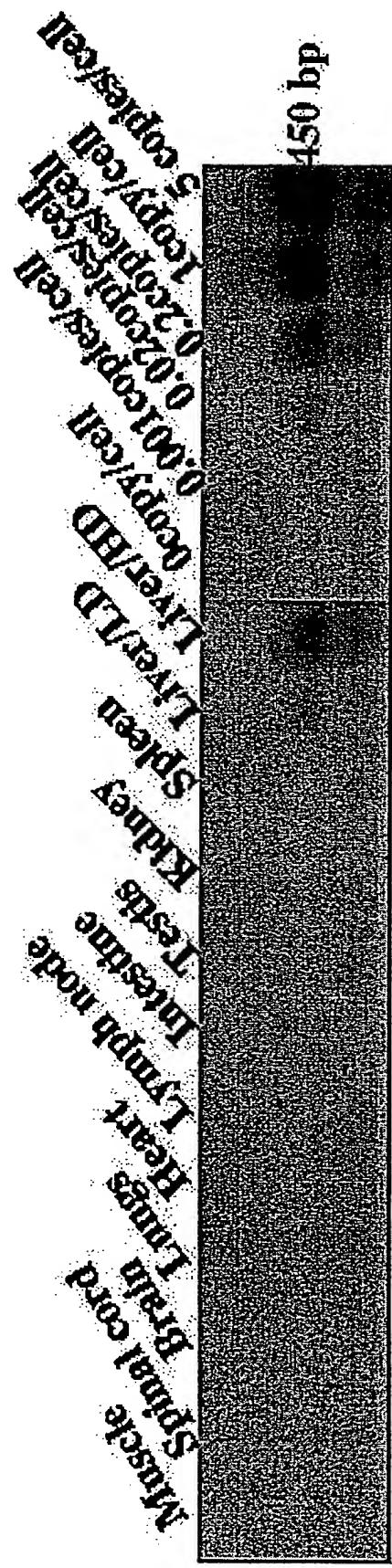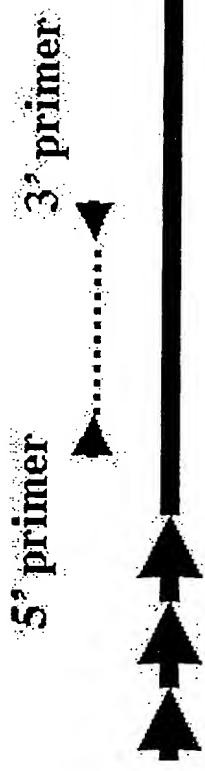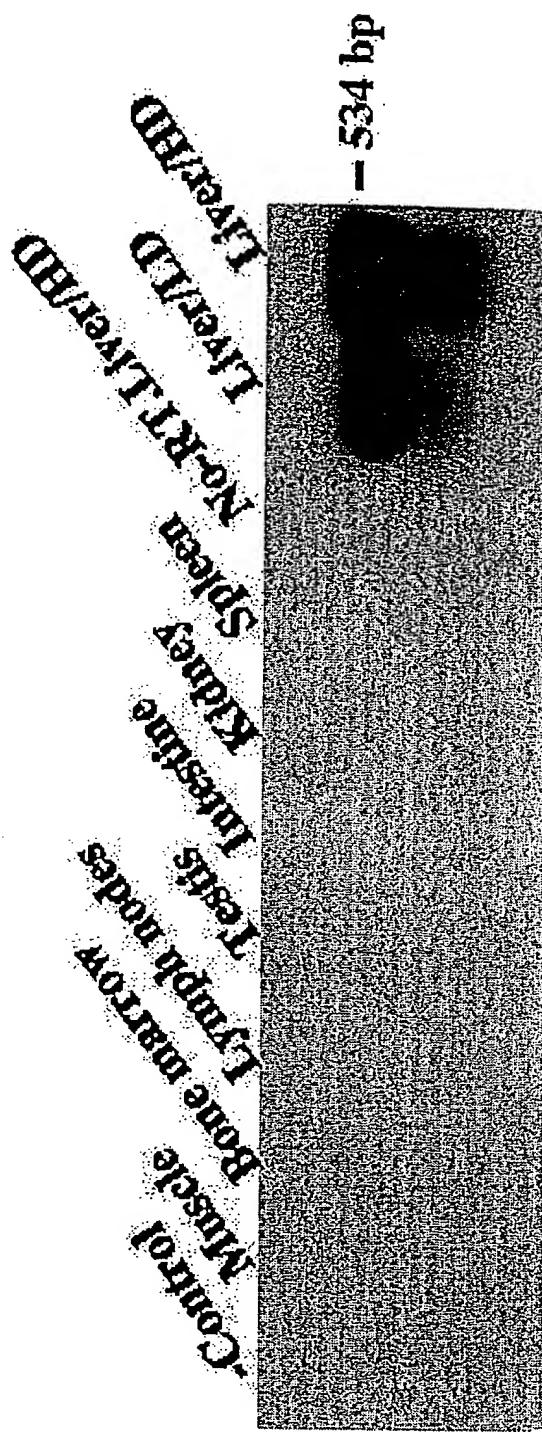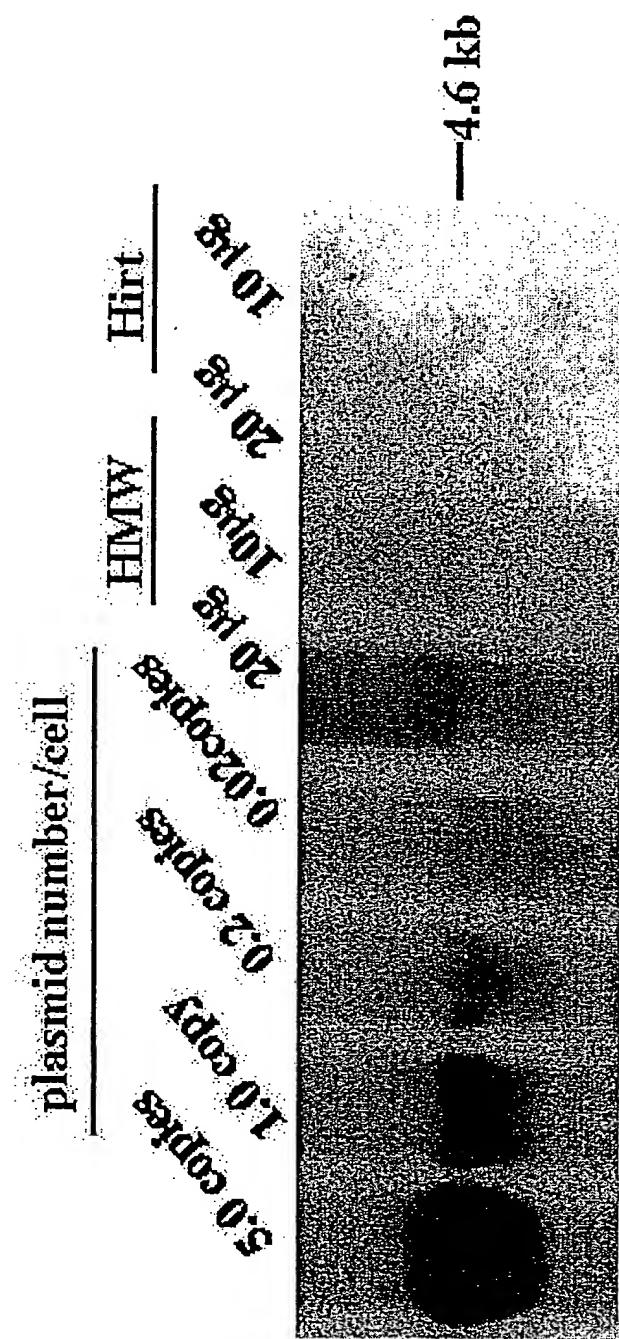
FIGURE 5-E

FIGURE 5-F

FIGURE 6

```
          10          20          30          40          50
  1234567890  1234567890  1234567890  1234567890  1234567890
  TGGCCACTCC  CTCTCTGCGC  GCTCGCTCGC  TCACTGAGGC  CGGGCGACCA    50

  AAGGTCGCCC  GACGCCCGGG  CTTTGCCCGG  GCGGCCTCAG  TGAGCGAGCG   100

  AGCGCGCAGA  GAGGGAGTGG  CCAACTCCAT  CACTAGGGGT  TCCTCAGATC   150

  TCTTTCTAAG  TAAACAGTAC  ATGAACCTTT  ACCCCGTTGC  TCGGCAACGG   200

  CCTGGTCTGT  GCCAAGTGTT  TGCTGACGCA  ACCCCCACTG  GCTGGGGCTT   250

  GGCCATAGGC  CATCAGCGCA  TGCGGATCTC  AGTGTGGTTT  TGCAAGAGGA   300

  AGCAAAAAGC  CTCTCCACCC  AGGCCTGGAA  TGTTCCACC   CAATGTCGAG   350

  CAGTGTGGTT  TTGCAAGAGG  AAGCAAAAAG  CCTCTCCACC  CAGGCCTGGA   400

  CTCGACCTCG  AGAGTACTTC  TAGAAATACG  AGCCATGCAA  GTAGAGCTCT   450
                                     MetGln  ValGluLeuT
  ACACCTGCTG  CTTTCTGTGC  CTTTTGCCCT  TCAGCCTTAG  TGCCACCAGA   500
  yrThrCysCy  sPheLeuCys  LeuLeuProP  heSerLeuSe  rAlaThrArg
  AAATACTACC  TCGGTGCAGT  GGAACTGTCC  TGGACTATA   TGCAAAGTGA   550
  LysTyrTyrL  euGlyAlaVa  lGluLeuSer  TrpAspTyrM  etGlnSerAs
  CCTGCTCAGT  GCGCTGCACG  CGGATACAAG  CTTTTCTTCC  AGGGTGCCAG   600
  pLeuLeuSer  AlaLeuHisA  laAspThrSe  rPheSerSer  ArgValProG
  GATCTTTGCC  ACTCACCACG  TCAGTCACGT  ACAGAAAGAC  TGTGTTTGTA   650
  lySerLeuPr  oLeuThrThr  SerValThrT  yrArgLysTh  rValPheVal
  GAGTTACAG   ATGACCTTTT  CAACATTGCC  AAGCCCAGGC  CACCGTGGAT   700
  GluPheThrA  spAspLeuPh  eAsnIleAla  LysProArgP  roProTrpMe
  GGGCCTGCTG  GGTCCTACCA  TCCAGGCTGA  GGTTTATGAC  ACAGTGGTCA   750
  tGlyLeuLeu  GlyProThrI  leGlnAlaGl  uValTyrAsp  ThrValValI
  TTGTCCTTAA  GAACATGGCT  TCTCATCCTG  TCAGCCTTCA  CGCTGTTGGT   800
  leValLeuLy  sAsnMetAla  SerHisProV  alSerLeuHi  sAlaValGly
  GTATCCTATT  GGAAAGCTTC  TGAAGGTGCT  GAGTATGAGG  ATCAGACCAG   850
  ValSerTyrT  rpLysAlaSe  rGluGlyAla  GluTyrGluA  spGlnThrSe
  CCAAAAGGAG  AAGGAAGATG  ATAATGTCAT  TCCTGGTGAA  AGCCATACCT   900
  rGlnLysGlu  LysGluAspA  spAsnValIl  eProGlyGlu  SerHisThrT
  ATGTCTGGCA  GGTCCTGAAA  GAGAATGGCC  CAATGGCCTC  TGATCCACCA   950
  yrValTrpGl  nValLeuLys  GluAsnGlyP  roMetAlaSe  rAspProPro
```

FIGURE 6 (cont.)

	10	20	30	40	50	
	1234567890	1234567890	1234567890	1234567890	1234567890	

TGTCTCACCT ACTCATATTT TTCACACGTG GACCTGGTGA AAGACCTGAA   1000
CysLeuThrT yrSerTyrPh eSerHisVal AspLeuValL ysAspLeuAs

TTCAGGCCTC ATTGGAGCCC TGCTGGTTTG CAAAGAAGGG AGTCTGGCCA   1050
nSerGlyLeu IleGlyAlaL euLeuValCy sLysGluGly SerLeuAlaL

AAGAAAGGAC ACAGACCTTG CAGGAATTTG TCCTACTTTT TGCTGTATTT   1100
ysGluArgTh rGlnThrLeu GlnGluPheV alLeuLeuPh eAlaValPhe

GATGAAGGGA AAAGTTGGCA CTCAGAAACA AATGCGTCTT TGACACAGGC   1150
AspGluGlyL ysSerTrpHi sSerGluThr AsnAlaSerL euThrGlnAl

TGAGGCCCAG CATGAGCTGC ACACCATCAA TGGCTATGTA AACAGGTCTC   1200
aGluAlaGln HisGluLeuH isThrIleAs nGlyTyrVal AsnArgSerL

TGCCAGGTCT TACTGTGTGT CACAAGAGAT CAGTCTATTG GCATGTGATT   1250
euProGlyLe uThrValCys HisLysArgS erValTyrTr pHisValIle

GGAATGGGCA CCACCCCCGA AGTGCACTCA ATTTTTCTCG AAGGTCACAC   1300
GlyMetGlyT hrThrProGl uValHisSer IlePheLeuG luGlyHisTh

ATTTCTTGTG AGGAACCACC GCCAGGCCTC CTTGGAGATC TCACCAATTA   1350
rPheLeuVal ArgAsnHisA rgGlnAlaSe rLeuGluIle SerProIleT

CTTTCCTTAC TGCTCAGACA TTCCTGATGG ACCTTGGCCA GTTTCTACTG   1400
hrPheLeuTh rAlaGlnThr PheLeuMetA spLeuGlyGl nPheLeuLeu

TTTTGTCATA TCCCTTCCCA TCAACATGAT GGTATGGAAG CTTATGTCAA   1450
PheCysHisI leProSerHi sGlnHisAsp GlyMetGluA laTyrValLy

AGTAGATAGC TGCCCAGAGG AACCCCAGCT GCGCATGAAA AATAATGAAG   1500
sValAspSer CysProGluG luProGlnLe uArgMetLys AsnAsnGluA

ATAAAGATTA TGATGATGGT CTTTATGATT CTGACATGGA CGTAGTTAGC   1550
spLysAspTy rAspAspGly LeuTyrAspS erAspMetAs pValValSer

TTTGATGACG ACAGCTCTTC TCCCTTTATC CAAATCCGCT CAGTTGCCAA   1600
PheAspAspA spSerSerSe rProPheIle GlnIleArgS erValAlaLy

GAAGCATCCT AAAACTTGGG TCCACTATAT TGCTGCTGAG GAGGAGGACT   1650
sLysHisPro LysThrTrpV alHisTyrIl eAlaAlaGlu GluGluAspT

GGGACTATGC TCCCTCAGGC CCCACCCCCA ATGATAGAAG TCATAAAAAT   1700
rpAspTyrAl aProSerGly ProThrProA snAspArgSe rHisLysAsn

CTGTATTTGA ACAATGGTCC TCAGCGGATT GGTAAGAAGT ACAAAAAAGT   1750
LeuTyrLeuA snAsnGlyPr oGlnArgIle GlyLysLysT yrLysLysVa

CCGATTTGTG GCATACACAG ATGAGACATT TAAGACTCGT GAAGCTATTC   1800
lArgPheVal AlaTyrThrA spGluThrPh eLysThrArg GluAlaIleG

AGTATGAATC AGGAATCCTG GGACCTTTAC TTTATGGAGA AGTTGGAGAC   1850
lnTyrGluSe rGlyIleLeu GlyProLeuL euTyrGlyGl uValGlyAsp

ACACTGCTGA TTATATTTAA GAATCAAGCC AGCCGGCCAT ATAACATCTA   1900
ThrLeuLeuI leIlePheLy sAsnGlnAla SerArgProT yrAsnIleTy

-2-

FIGURE 6 (cont.)

```
           10         20         30         40         50
     1234567890 1234567890 1234567890 1234567890 1234567890
     CCCTCATGGG ATCAATTATG TCACTCCTCT GCACACAGGG AGATTGCCAA    1950
     rProHisGly IleAsnTyrV alThrProLe uHisThrGly ArgLeuProL
     AAGGTGTGAA ACATTTGAAA GATATGCCAA TTCTGCCGGG AGAGATATTC    2000
     ysGlyValLy sHisLeuLys AspMetProI leLeuProGl yGluIlePhe
     AAGTATAAAT GGACAGTGAC CGTAGAAGAT GGACCAACTA AATCAGATCC    2050
     LysTyrLysT rpThrValTh rValGluAsp GlyProThrL ysSerAspPr
     TCGGTGCCTG ACCGGATATT ACTCAAGCTT CATTAATCTG GAGAGAGATC    2100
     oArgCysLeu ThrArgTyrT yrSerSerPh eIleAsnLeu GluArgAspL
     TAGCTTCAGG ACTCATTGGC CCTCTTCTCA TCTGCTACAA AGAATCTGTA    2150
     euAlaSerGl yLeuIleGly ProLeuLeuI leCysTyrLy sGluSerVal
     GATCAAAGAG GAAACCAGAT GATGTCAGAC AAGAGAAATG TCATCCTGTT    2200
     AspGlnArgG lyAsnGlnMe tMetSerAsp LysArgAsnV alIleLeuPh
     TTCTGTATTT GATGAGAATC GAAGCTGGTA CCTCACAGAG AATATGCAGC    2250
     eSerValPhe AspGluAsnA rgSerTrpTy rLeuThrGlu AsnMetGlnA
     GCTTCCTCCC CAATGCAGAT GTAGTGCAGC CCCATGACCC AGAGTTCCAA    2300
     rgPheLeuPr oAsnAlaAsp ValValGlnP roHisAspPr oGluPheGln
     CTCTCTAACA TCATGCACAG CATCAATGGC TATGTTTTTG ACAACTTGCA    2350
     LeuSerAsnI leMetHisSe rIleAsnGly TyrValPheA spAsnLeuGl
     GCTGTCAGTT TGTTTGCATG AGGTGGCGTA CTGGTACATT CTAAGTGTTG    2400
     nLeuSerVal CysLeuHisG luValAlaTy rTrpTyrIle LeuSerValG
     GAGCACAAAC TGACTTCCTG TCTGTCTTCT TCTCTGGATA TACCTTCAAA    2450
     lyAlaGlnTh rAspPheLeu SerValPheP heSerGlyTy rThrPheLys
     CACAAAATGG TCTATGAAGA CACACTTACC CTCTTCCCAT TCTCAGGAGA    2500
     HisLysMetV alTyrGluAs pThrLeuThr LeuPheProP heSerGlyGl
     AACTGTCTTC ATGTCAATGG AAAACCCAGG TCTGTGGGTT CTGGGGTGCC    2550
     uThrValPhe MetSerMetG luAsnProGl yLeuTrpVal LeuGlyCysH
     ACAACTCAGA CTTTCGGAAC AGAGGCATGA CAGCCTTACT GAAGGTTTCT    2600
     isAsnSerAs pPheArgAsn ArgGlyMetT hrAlaLeuLe uLysValSer
     AGTTGTAACA GGAACATTGA TGATTATTAT GAGGACACAT ACGAAGATAT    2650
     SerCysAsnA rgAsnIleAs pAspTyrTyr GluAspThrT yrGluAspIl
     TCCAACTCCC CTGCTAAATG AAAACAATGT AATTAAACCT AGAAGCTTCT    2700
     eProThrPro LeuLeuAsnG luAsnAsnVa lIleLysPro ArgSerPheS
     CCCAGAATTC AAGGCACCCT AGCACTAAGG AAAAGCAATT GAAAATGAAG    2750
     erGlnAsnSe rArgHisPro SerThrLysG luLysGlnLe uLysMetLys
     AGAGAAGATT TTGACATCTA CGGCGACTAT GAAAATCAGG GCCTCCGCAG    2800
     ArgGluAspP heAspIleTy rGlyAspTyr GluAsnGlnG lyLeuArgSe
     CTTTCAAAAG AAAACACGAC ACTATTTCAT TGCTGCAGTG GAGCGTCTCT    2850
     rPheGlnLys LysThrArgH isTyrPheIl eAlaAlaVal GluArgLeuT
```

FIGURE 6 (cont.)

```
          10          20          30          40          50
  1234567890 1234567890 1234567890 1234567890 1234567890

GGGATTATGG GATGAGTAGA TCTCCCCATA TACTAAGAAA CAGGGCTCAA   2900
rpAspTyrGl yMetSerArg SerProHisI leLeuArgAs nArgAlaGln

AGTGGGGATG TCCAGCAGTT CAAGAAGGTG GTTTTCCAGG AATTTACTGA   2950
SerGlyAspV alGlnGlnPh eLysLysVal ValPheGlnG luPheThrAs

TGGATCCTTT ACTCAGCCCT TATACCGTGG AGAACTGAAT GAACACTTGG   3000
pGlySerPhe ThrGlnProL euTyrArgGl yGluLeuAsn GluHisLeuG

GACTCTTGGG GCCATATATA AGAGCAGAAG TTGAAGACAA TATCGTGGTA   3050
lyLeuLeuGl yProTyrIle ArgAlaGluV alGluAspAs nIleValVal

ACTTTCAAAA ACCAGGCCTC TCGTCCCTAC TCCTTCTATT CTAGTCTTAT   3100
ThrPheLysA snGlnAlaSe rArgProTyr SerPheTyrS erSerLeuIl

TTCTTATGAC GAAGATGAGG GACAAGGAGC AGAACCTAGA AGAAAGTTTG   3150
eSerTyrAsp GluAspGluG lyGlnGlyAl aGluProArg ArgLysPheV

TCAACCCTAA TGAAACCAAA ATTTACTTTT GGAAAGTGCA GCATCATATG   3200
alAsnProAs nGluThrLys IleTyrPheT rpLysValGl nHisHisMet

GCACCCACTA AAGATGAGTT TGACTGCAAA GCCTGGGCTT ATTTTTCTGA   3250
AlaProThrL ysAspGluPh eAspCysLys AlaTrpAlaT yrPheSerAs

TGTTGATTTG GAGAAAGATG TGCACTCAGG CTTGATTGGA CCCCTTCTGA   3300
pValAspLeu GluLysAspV alHisSerGl yLeuIleGly ProLeuLeuI

TCTGCCGCAG TAACACACTG AACCCTGCTC ATGGGAGACA AGTGACAGTG   3350
leCysArgSe rAsnThrLeu AsnProAlaH isGlyArgGl nValThrVal

CAGGAGTTTG CCCTGGTTTT CACTATATTC GATGAGACTA AGAGCTGGTA   3400
GlnGluPheA laLeuValPh eThrIlePhe AspGluThrL ysSerTrpTy

CTTCACTGAA AACCTGGAAA GGAACTGTAG AGCTCCCTGC AATGTCCAGA   3450
rPheThrGlu AsnLeuGluA rgAsnCysAr gAlaProCys AsnValGlnL

AGGAGGACCC TACTCTAAAA GAAAACTTCC GCTTCCATGC AATCAACGGC   3500
ysGluAspPr oThrLeuLys GluAsnPheA rgPheHisAl aIleAsnGly

TATGTGAAGG ATACACTCCC TGGCTTAGTA ATGGCTCAGG ATCAAAAGGT   3550
TyrValLysA spThrLeuPr oGlyLeuVal MetAlaGlnA spGlnLysVa

TCGATGGTAT CTGCTCAGCA TGGGCAGCAA CGAAAACATT CATTCCATTC   3600
lArgTrpTyr LeuLeuSerM etGlySerAs nGluAsnIle HisSerIleH

ACTTCAGTGG ACATGTGTTC ACTGTACGGA AAAAGAGGA ATATAAAATG    3650
isPheSerGl yHisValPhe ThrValArgL ysLysGluGl uTyrLysMet

GCAGTCTACA ACCTCTATCC AGGTGTTTT GAGACTGTGG AAATGCTACC    3700
AlaValTyrA snLeuTyrPr oGlyValPhe GluThrValG luMetLeuPr

ATCCCAAGTT GGAATCTGGC GGATAGAATG CCTTATCGGC GAGCACCTGC   3750
oSerGlnVal GlyIleTrpA rgIleGluCy sLeuIleGly GluHisLeuG

AAGCCGGGAT GAGCACTCTG TTTCTGGTGT ACAGCAAGAA GTGTCAGACT   3800
lnAlaGlyMe tSerThrLeu PheLeuValT yrSerLysLy sCysGlnThr
```

FIGURE 6 (cont.)

```
              10          20          30          40          50
          1234567890  1234567890  1234567890  1234567890  1234567890

          CCACTGGGGA  TGGCTTCCGG  ACACATTAGA  GATTTTCAGA  TTACAGCTTC    3850
          ProLeuGlyM  etAlaSerGl  yHisIleArg  AspPheGlnI  leThrAlaSe

          AGGACAATAT  GGACAGTGGG  CCCCAAAGCT  GGCCAGACTT  CATTATTCCG    3900
          rGlyGlnTyr  GlyGlnTrpA  laProLysLe  uAlaArgLeu  HisTyrSerG

          GATCAATCAA  TGCCTGGAGC  ACCAAGGATC  CCTTTTCCTG  GATCAAGGTG    3950
          lySerIleAs  nAlaTrpSer  ThrLysAspP  roPheSerTr  pIleLysVal

          GATCTCTTGG  CACCGATGAT  TATTCACGGC  ATCATGACCC  AGGGGGCCCG    4000
          AspLeuLeuA  laProMetIl  eIleHisGly  IleMetThrG  lnGlyAlaAr

          CCAGAAGTTC  TCCAGCCTCT  ACGTGTCTCA  GTTTATCATC  ATGTACAGTC    4050
          gGlnLysPhe  SerSerLeuT  yrValSerGl  nPheIleIle  MetTyrSerL

          TGGATGGCAA  CAAGTGGCAC  AGTTACCGAG  GGAATTCCAC  GGGGACCTTA    4100
          euAspGlyAs  nLysTrpHis  SerTyrArgG  lyAsnSerTh  rGlyThrLeu

          ATGGTCTTCT  TTGGCAACGT  GGATTCATCT  GGGATCAAAC  ACAATATTTT    4150
          MetValPheP  heGlyAsnVa  lAspSerSer  GlyIleLysH  isAsnIlePh

          TAACCCTCCG  ATTATTGCTC  AGTACATCCG  TTTGCACCCA  ACCCATTACA    4200
          eAsnProPro  IleIleAlaG  lnTyrIleAr  gLeuHisPro  ThrHisTyrS

          GCATCCGCAG  CACTCTTCGC  ATGGAGCTCT  TGGGCTGTGA  CTTCAACAGT    4250
          erIleArgSe  rThrLeuArg  MetGluLeuL  euGlyCysAs  pPheAsnSer

          TGCAGCATGC  CGCTGGGGAT  GGAGAGTAAA  GCAATATCAG  ATGCTCAGAT    4300
          CysSerMetP  roLeuGlyMe  tGluSerLys  AlaIleSerA  spAlaGlnIl

          CACTGCCTCG  TCCTACCTAA  GCAGTATGCT  TGCCACTTGG  TCTCCTTCCC    4350
          eThrAlaSer  SerTyrLeuS  erSerMetLe  uAlaThrTrp  SerProSerG

          AAGCCCGGCT  GCACCTGCAG  GGCAGGACTA  ATGCCTGGAG  ACCTCAGGCA    4400
          lnAlaArgLe  uHisLeuGln  GlyArgThrA  snAlaTrpAr  gProGlnAla

          AATAACCCAA  AAGAGTGGCT  GCAAGTGGAC  TTCCGGAAGA  CCATGAAAGT    4450
          AsnAsnProL  ysGluTrpLe  uGlnValAsp  PheArgLysT  hrMetLysVa

          CACAGGAATA  ACCACCCAGG  GGGTGAAATC  TCTCCTCATC  AGCATGTATG    4500
          lThrGlyIle  ThrThrGlnG  lyValLysSe  rLeuLeuIle  SerMetTyrV

          TGAAGGAGTT  CCTCATCTCC  AGTAGTCAAG  ATGGCCATAA  CTGGACTCTG    4550
          alLysGluPh  eLeuIleSer  SerSerGlnA  spGlyHisAs  nTrpThrLeu

          TTTCTTCAGA  ATGGCAAAGT  CAAGGTCTTC  CAGGGAAACC  GGGACTCCTC    4600
          PheLeuGlnA  snGlyLysVa  lLysValPhe  GlnGlyAsnA  rgAspSerSe

          CACGCCTGTG  CGGAACCGTC  TCGAACCCCC  GCTGGTGGCT  CGCTACGTGC    4650
          rThrProVal  ArgAsnArgL  euGluProPr  oLeuValAla  ArgTyrValA

          GCCTGCACCC  GCAGAGCTGG  GCGCACCACA  TCGCCCTGAG  GCTGGAGGTC    4700
          rgLeuHisPr  oGlnSerTrp  AlaHisHisI  leAlaLeuAr  gLeuGluVal

          CTGGCTGCG  ACACCCAGCA  GCCCGCCTGA  CCCGCGCCTC  TGCGGCCCTG    4750
          LeuGlyCysA  spThrGlnGl  nProAla...
```

FIGURE 6 (cont.)

```
          10         20         30         40         50
1234567890 1234567890 1234567890 1234567890 1234567890
```

```
TCTCCCCTGC CTCCCTGCCC TGTCCCCGCG GCTTCCCATC AAGCTTATCG   4800

ATACCGTCGA GCGAGTTCTT CTGAGGGGAT CGGCAATAAA AAGACAGAAT   4850

AAAACGCACG GGTGTTGGGT CGTTTGTTCG GATCCAGATC TAGGAACCCC   4900

TAGTGATGGA GTTGGCCACT CCCTCTCTGC GCGCTCGCTC GCTCACTGAG   4950

GCCGCCCGGG CAAAGCCCGG CGTCGGGCG ACCTTTGGTC GCCCGGCCTC    5000

AGTGAGCGAG CGAGCGCGCA GAGAGGGAGT GGCCAACCCC CCCCCCCCCC   5050

CCCCTGCAGC CCAGCTGCAT TAATGAATCG GCCAACGCGC GGGGAGAGGC   5100

GGTTTGCGTA TTGGGCGCTC TTCCGCTTCC TCGCTCACTG ACTCGCTGCG   5150

CTCGGTCGTT CGGCTGCGGC GAGCGGTATC AGCTCACTCA AAGGCGGTAA   5200

TACGGTTATC CACAGAATCA GGGGATAACG CAGGAAAGAA CATGTGAGCA   5250

AAAGGCCAGC AAAAGGCCAG GAACCGTAAA AAGGCCGCGT TGCTGGCGTT   5300

TTTCCATAGG CTCCGCCCCC CTGACGAGCA TCACAAAAAT CGACGCTCAA   5350

GTCAGAGGTG GCGAAACCCG ACAGGACTAT AAAGATACCA GGCGTTTCCC   5400

CCTGGAAGCT CCCTCGTGCG CTCTCCTGTT CCGACCCTGC CGCTTACCGG   5450

ATACCTGTCC GCCTTTCTCC CTTCGGGAAG CGTGGCGCTT TCTCAATGCT   5500

CACGCTGTAG GTATCTCAGT TCGGTGTAGG TCGTTCGCTC CAAGCTGGGC   5550

TGTGTGCACG AACCCCCCGT TCAGCCCGAC CGCTGCGCCT TATCCGGTAA   5600

CTATCGTCTT GAGTCCAACC CGGTAAGACA CGACTTATCG CCACTGGCAG   5650

CAGCCACTGG TAACAGGATT AGCAGAGCGA GGTATGTAGG CGGTGCTACA   5700
```

FIGURE 6 (cont.)

```
          10         20         30         40         50
 1234567890 1234567890 1234567890 1234567890 1234567890
 GAGTTCTTGA AGTGGTGGCC TAACTACGGC TACACTAGAA GGACAGTATT      5750

 TGGTATCTGC GCTCTGCTGA AGCCAGTTAC CTTCGGAAAA AGAGTTGGTA      5800

 GCTCTTGATC CGGCAAACAA ACCACCGCTG GTAGCGGTGG TTTTTTTGTT      5850

 TGCAAGCAGC AGATTACGCG CAGAAAAAAA GGATCTCAAG AAGATCCTTT      5900

 GATCTTTTCT ACGGGGTCTG ACGCTCAGTG GAACGAAAAC TCACGTTAAG      5950

 GGATTTTGGT CATGAGATTA TCAAAAAGGA TCTTCACCTA GATCCTTTTA      6000

 AATTAAAAAT GAAGTTTTAA ATCAATCTAA AGTATATATG AGTAAACTTG      6050

 GTCTGACAGT TACCAATGCT TAATCAGTGA GGCACCTATC TCAGCGATCT      6100
            ylGelIreS ueL...siHo rPlaV...gr AueLreSgrA
 GTCTATTTCG TTCATCCATA GTTGCCTGAC TCCCCGTCGT GTAGATAACT      6150
 psAelIulGn sAteMprTue LnlGgrAlaV ylGgrAgrAr hTreSueL..
 ACGATACGGG AGGGCTTACC ATCTGGCCCC AGTGCTGCAA TGATACCGCG      6200
 .reSlaVorP orPreSlaVt eMnlGylGpr TsiHnlGueL reSlaValAu
 AGACCCACGC TCACCGGCTC CAGATTTATC AGCAATAAAC CAGCCAGCCG      6250
 eLylGlaVre SlaVorPulG ueLnsAelIu eLueLueLyl GalAueLgrA
 GAAGGGCCGA GCGCAGAAGT GGTCCTGCAA CTTTATCCGC CTCCATCCAG      6300
 ehPorPgrAa lAsyCehPsi HpsAnlGueL syLelIgrAg rAprTylGrh
 TCTATTAATT GTTGCCGGGA AGCTAGAGTA AGTAGTTCGC CAGTTAATAG      6350
 T......nsA nsAylGorPu eL...ueLue LryTnsAalA ueL...ryTn
 TTTGCGCAAC GTTGTTGCCA TTGCTACAGG CATCGTGGTG TCACGCTCGT      6400
 sAalAsyCgr AnlGnlGprT nlG...ueLs yCgrAorPrh TlaVreSrhT
 CGTTTGGTAT GGCTTCATTC AGCTCCGGTT CCCAACGATC AAGGCGAGTT      6450
 rhTnlGryTo rPsyLteM.. .reSgrAnsA ylGlaVelIu eLalAueL..
 ACATGATCCC CCATGTTGTG CAAAAAAGCG GTTAGCTCCT TCGGTCCTCC      6500
 .teMelIylG prTrhTrhTs yCehPueLor P...reSgrA grApsAulGr
 GATCGTTGTC AGAAGTAAGT TGGCCGCAGT GTTATCACTC ATGGTTATGG      6550
 eSgrAnlG.. .ehPryTrhT orPgrAueLr hTelIlaV.. .orP...orP
 CAGCACTGCA TAATTCTCTT ACTGTCATGC CATCCGTAAG ATGCTTTTCT      6600
 ueLlaValAr yTnsAulG.. .nlG...alA teMgrAueLe lIreSsyLnl
 GTGACTGGTG AGTACTCAAC CAAGTCATTC TGAGAATAGT GTATGCGGCG      6650
 GreSnlGsiH rhTreSueLp rTrhTteMgr AueLelIrhT ryTalAalAl
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FIGURE 6 (cont.)

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        10          20          30          40          50
1234567890  1234567890  1234567890  1234567890  1234567890
ACCGAGTTGC  TCTTGCCCGG  CGTCAATACG  GGATAATACC  GCGCCACATA   6700
aVreSnsAre  SsyLylGorP  rhTueLlaVo  rPryTryTgr  AalAlaVryT
GCAGAACTTT  AAAAGTGCTC  ATCATTGGAA  AACGTTCTTC  GGGGCGAAAA   6750
syCehPsyLu  eLueLalA..  ....nlGehP  laVnsAsyLo  rPalAehPla
CTCTCAAGGA  TCTTACCGCT  GTTGAGATCC  AGTTCGATGT  AACCCACTCG   6800
VgrAueLreS  grAlaValAr  hTreSelIpr  TnsAreSrhT  laVprTulGs
TGCACCCAAC  TGATCTTCAG  CATCTTTTAC  TTTCACCAGC  GTTTCTGGGT   6850
iHlaVprTre  SelIsyLueL  teMsyL...s  yL...prTgr  AsyLnlGrhT
GAGCAAAAAC  AGGAAGGCAA  AATGCCGCAA  AAAAGGGAAT  AAGGGCGACA   6900
ueLueLehPu  eLehPalAeh  PsiHgrAueL  ehPorPehPu  eLorPreSla
CGGAAATGTT  GAATACTCAT  ACTCTTCCTT  TTTCAATATT  ATTGAAGCAT   6950
VreSelInsA  ehPlaV...1
TTATCAGGGT  TATTGTCTCA  TGAGCGGATA  CATATTTGAA  TGTATTTAGA   7000

AAAATAAACA  AATAGGGGTT  CCGCGCACAT  TTCCCCGAAA  AGTGCCACCT   7050

GACGTCTAAG  AAACCATTAT  TATCATGACA  TTAACCTATA  AAAATAGGCG   7100

TATCACGAGG  CCCTTTCGTC  TCGCGCGTTT  CGGTGATGAC  GGTGAAAACC   7150

TCTGACACAT  GCAGCTCCCG  GAGACGGTCA  CAGCTTGTCT  GTAAGCGGAT   7200

GCCGGGAGCA  GACAAGCCCG  TCAGGGCGCG  TCAGCGGGTG  TTGGCGGGTG   7250

TCGGGGCTGG  CTTAACTATG  CGGCATCAGA  GCAGATTGTA  CTGAGAGTGC   7300

ACCATATGCG  GTGTGAAATA  CCGCACAGAT  GCGTAAGGAG  AAAATACCGC   7350

ATCAGGAAAT  TGTAAACGTT  AATATTTTGT  TAAAATTCGC  GTTAAATTTT   7400

TGTTAAATCA  GCTCATTTTT  TAACCAATAG  GCCGAAATCG  GCAAAATCCC   7450

TTATAAATCA  AAAGAATAGA  CCGAGATAGG  GTTGAGTGTT  GTTCCAGTTT   7500

GGAACAAGAG  TCCACTATTA  AAGAACGTGG  ACTCCAACGT  CAAAGGGCGA   7550

AAAACCGTCT  ATCAGGGCGA  TGGCCCACTA  CGTGAACCAT  CACCCTAATC   7600
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FIGURE 6 (cont.)

10	20	30	40	50	
1234567890	1234567890	1234567890	1234567890	1234567890	

AAGTTTTTTG GGGTCGAGGT GCCGTAAAGC ACTAAATCGG AACCCTAAAG 7650

GGAGCCCCCG ATTTAGAGCT TGACGGGGAA AGCCGGCGAA CGTGGCGAGA 7700

AAGGAAGGGA AGAAAGCGAA AGGAGCGGGC GCTAGGGCGC TGGCAAGTGT 7750

AGCGGTCACG CTGCGCGTAA CCACCACACC CGCCGCGCTT AATGCGCCGC 7800

TACAGGGCGC GTCGCGCCAT TCGCCATTCA GGCTACGCAA CTGTTGGGAA 7850

GGGCGATCGG TGCGGGCCTC TTCGCTATTA CGCCAGCTGG CTGCAGGGGG 7900

GGGGGGGGGG GGGT 7914